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40032	7590	10/26/2009	EXAMINER	
CREATIVE LABS, INC. LEGAL DEPARTMENT 1901 MCCARTHY BLVD MILPITAS, CA 95035			ZHEN, LI B	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

1. Claims 1 – 13 are pending in the application.

Response to Arguments

2. Applicant's arguments filed 6/17/2009 have been fully considered but they are not persuasive. In the response, applicant argues:

- (1) Tang does not teach or suggest providing a driving system having additional driver means interposed between an Operating System and a legacy driver and the driving system configured for driving the original functionality provided by the first driver and enabling additional functionality beyond that provided by the first driver, as required by claim 1. Tang's teachings are instead limited to modifications at the Operating System (OS) level [p. 6];

- (2) Warwick (System and Method for Predicting Storage Device Failures) teaches a WMI extensions to WDM provider 70 (e.g., Fig. 2A) interposed between the Operating System and various drivers (e.g., Fig. 2B elements 80-82 and 70-72) but doesn't teach or suggest a device driving system enabling "operation of at least one further hardware device of functionality differing from said predetermined functionality and unsupported by said operating system". The WMI provider 70 in Warwick merely allows devices to make management information available to management applications 62 by providing a pipeline between user mode 60 and kernel mode 76; hence it is not a driver which enables an additional previously unsupported hardware device [pp. 7-8].

As to argument (1), examiner notes that applicant's specification discloses the legacy device driver as a WDM driver [WDM driver 3, Fig. 3]. Similar to applicant's specification, Tang teaches additional driver means [audio renderer filter; col. 49, line 10 – col. 50, line 6] communicating with a legacy driver [DirectDSP HAL; col. 47, lines 23 – 37]. The renderer filter and DirectDSP HAL does not require modifications to the Operating Systems.

As to argument (2), examiner respectfully disagrees and notes that the WDM provider 70 in Warwick provides support for SMART SCSI devices [col. 8, lines 2 – col. 9, line 29]. For example, the WDM provider initializes the storage device (block 102, Fig. 3A), performs a "query" to determine if the device supports failure prediction (block 104, Fig. 3A) and sends a hardware command to the disk to try to enable Informational Exceptions reporting [col. 8, lines 10 – 29]. Therefore, the WDM provider provides support for additional previously unsupported hardware device (i.e. SMART SCSI devices).

Allowable Subject Matter

3. Claim 11 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

Art Unit: 2194

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1 – 10, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,298,370 to Tang et al. hereinafter [Tang, previously cited] in view of U.S. Patent No. 6,460,151 to Warwick et al. [hereinafter Warwick].**

6. As to claim 1, Tang teaches a device driving system implemented in a computer [col. 106, lines 8 – 23] and configured for driving at least one hardware device [audio hardware; col. 35, lines 8 – 29] of predetermined functionality from an operating system of the computer [col. 14, lines 10 – 26] that communicates with an installed driver for said hardware device [WDM Comm Class Driver supports other legacy comm functions; col. 99, line 65 – col. 100, line 6], the device driving system comprising:

additional driver means configured to enable operation of at least one further hardware device of functionality differing from a predetermined functionality and unsupported by said software system [an ActiveDSP audio renderer filter accepts PCM, MPEG, or AC-3 audio streams, and passes the streams through DirectDSP/DirectDSP HAL to VSP hardware for decoding and playback; col. 36, lines 10 – 18]. Tang does not specifically disclose the device driving system including additional driver means

Art Unit: 2194

interposed between the operating system and the installed driver and configured to interface directly with at least said operating system.

However, Warwick teaches the device driving system including additional driver means [WMI extensions to WDM 72; col. 6, lines 24 – 36] interposed between the operating system [operating system 35; col. 5, lines 16 – 37] and the said installed driver and configured to interface directly with at least said operating system [user mode driver 72 communicates with the kernel mode driver 74 in order to pass messages between user mode 60 and kernel mode 76; col. 6, lines 24 – 36 and col. 8, lines 11 – 29].

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the invention of Tang to incorporate the features of Warwick. One of ordinary skill in the art would have been motivated to make the combination because this allows WDM-enabled drivers to implement WMI, and also acts as an interface the WDM provider that resides in the user mode [col. 1, lines 42 – 50 of Warwick].

7. As to claim 8, Tang as modified teaches a computer readable medium [col. 102, lines 3 – 30 of Tang] comprising executable instructions that cause a computer to generate a supplemental device driver [Windows Driver Model; col. 35, lines 28 – 41 of Tang] for positioning between an operating system [col. 47, lines 25 – 38 of Tang] and at least one installed audio driver provided with the operating system [WDM Comm Class Driver supports other legacy comm functions; col. 99, line 65 – col. 100, line 6 of

Art Unit: 2194

Tang] and coupled to an audio card device [col. 19, lines 25 – 36 of Tang], said at least one installed audio driver configured to be responsive to selected communications to cause the audio card device to demonstrate predetermined functionality [col. 35, lines 7 – 30 of Tang] envisaged by the operating system provider [col. 14, lines 10 – 26 of Tang], the supplemental driver means configured to:

receive a first communications for an operation directly from the operating system [col. 6, lines 24 – 36 and col. 8, lines 11 – 29 of Warwick] at a first input interface between the operating system [col. 5, lines 16 – 37 of Warwick] and the supplemental driver means [col. 18, lines 41 – 50 of Tang and col. 6, lines 24 – 36 of Warwick]; and

forward a second communication for the operation over a first output interface to a first of the at least one installed audio driver [an ActiveDSP audio renderer filter accepts PCM, MPEG, or AC-3 audio streams, and passes the streams through DirectDSP/DirectDSP HAL to VSP hardware for decoding and playback; col. 36, lines 10 – 18 of Tang], wherein the second communication causes the driver to generate functionality envisaged by the operating system provider [col. 6, lines 24 – 36 of Warwick] when the coupled audio card is a USB audio card supporting the predetermined functionality [col. 48, lines 16 – 40 of Tang] and to generate functionality not envisaged by the operating system provider [col. 7, line 52 – col. 8, line 29 of Warwick] when the coupled audio card has 3D positioning of sound functionality that is beyond the predetermined functionality [second VSP block 620 virtualizes 3D audio; col. 110, lines 40 – 55 of Tang].

8. As to claim 9, Tang as modified teaches a computer implemented method for providing communications between an operating system [col. 47, lines 25 – 38 of Tang] and at least one installed device driver provided with the operating system [WDM Comm Class Driver supports other legacy comm functions; col. 99, line 65 – col. 100, line 6 of Tang] and coupled to a first hardware device [col. 19, lines 25 – 36 of Tang], a supplemental device driver [col. 6, lines 24 – 36 of Warwick] interposed between the operating system [col. 5, lines 16 – 37 of Warwick] and the installed device driver [col. 6, lines 24 – 36 and col. 8, lines 11 – 29 of Warwick], said at least one installed driver configured to be responsive to selected communications to cause the first hardware device to demonstrate predetermined functionality [col. 35, lines 7 – 30 of Tang] envisaged by the operating system provider [col. 14, lines 10 – 26 of Tang], the method comprising:

receiving a first communications for an operation directly from the operating system [col. 6, lines 24 – 36 and col. 8, lines 11 – 29 of Warwick] at a first input interface between the operating system [col. 5, lines 16 – 37 of Warwick] and the supplemental device driver [col. 18, lines 41 – 50 of Tang and col. 6, lines 24 – 36 of Warwick]; and

forwarding a second communication for the operation over a first output interface to a first of the at least one installed driver [an ActiveDSP audio renderer filter accepts PCM, MPEG, or AC-3 audio streams, and passes the streams through DirectDSP/DirectDSP HAL to VSP hardware for decoding and playback; col. 36, lines

Art Unit: 2194

10 – 18 of Tang], wherein the second communication causes the driver to generate functionality envisaged by the operating system provider [col. 6, lines 24 – 36 of Warwick] when the coupled hardware device supports the predetermined functionality [col. 48, lines 16 – 40 of Tang] and to generate functionality not envisaged by the operating system provider [col. 7, line 52 – col. 8, line 29 of Warwick] when the coupled hardware device has functionality beyond the predetermined functionality [second VSP block 620 virtualizes 3D audio; col. 110, lines 40 – 55 of Tang].

9. As to claim 2, Tang teaches the additional driver means is also configured to interface directly with said installed driver, thereby enabling continued and unchanged use of said at least one hardware device of predetermined functionality [col. 47, lines 25 – 38].

10. As to claim 3, Tang teaches the additional driver means is additionally configured to interface with a further driver which is configured to drive an additional hardware device [col. 110, lines 9 – 53].

11. As to claim 4, Tang teaches the additional driver means is additionally configured to interface with a further driver which is configured to drive an additional hardware device [col. 110, lines 9 – 53].

Art Unit: 2194

12. As to claim 5, Tang teaches the at least one hardware device comprise audio devices [col. 48, lines 16 – 40].

13. As to claim 6, Tang teaches the at least one hardware device comprises USB audio hardware and the additional device comprises hardware associated, with 3D positioning of sounds or environmental effects [col. 110, lines 40 – 55].

14. As to claim 7, Tang teaches the operating system is the Windows operating system and the said installed driver comprises a Windows Driver Model (WDM) audio driver [col. 35, lines 16 – 41].

15. As to claim 10, Tang teaches the at least one driver comprises a second driver coupled to a second hardware device and the supplemental device driver is further configured to forward the second communication to the second driver [col. 36, lines 10 – 18].

16. As to claim 12, Tang teaches the hardware device is a USB audio card having predetermined functionality envisaged by the operating system [col. 48, lines 16 – 40].

17. As to claim 13, Tang teaches the hardware device comprises hardware associated with is 3D positioning of sounds having functionality beyond the predetermined functionality [col. 110, lines 40 – 55].

Conclusion

18. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

CONTACT INFORMATION

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LI B. ZHEN whose telephone number is (571)272-3768. The examiner can normally be reached on Mon - Fri, 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hyung Sub Sough can be reached on 571-272-6799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2194

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Li B. Zhen/
Primary Examiner, Art Unit 2194